



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,027	01/08/2004	Sung-Koog Oh	5000-1-436	6075
33942	7590	05/30/2006	EXAMINER	
CHA & REITER, LLC 210 ROUTE 4 EAST STE 103 PARAMUS, NJ 07652			PAK, SUNG H	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary	Application No.	Applicant(s)	
	10/754,027	OH ET AL.	
	Examiner	Art Unit	
	Sung H. Pak	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16, 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 18-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/23/2006 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-12, 14-16, 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Fajardo et al (US 6,445,862 B1).

Fajardo discloses an optical device with limitations set forth in the claims, including: a rod-shaped substrate ('40' Fig. 4) with a plurality of holes ('52', '56' Fig. 4) longitudinally formed therethrough in a photonic lattice structure (column 4 lines 58-61); a plurality of longitudinal material members consisting of solid material (column 5 lines 27-30; column 5 lines 34-36), said members having at least two different indices of refraction (column 5 lines 27-30; column 5 lines 34-36), the members being inserted in the holes, wherein distribution of index of

Art Unit: 2874

refraction of the photonic crystal fiber preform is controlled by arrangement of the members, and said distribution of index of refraction of the photonic crystal fiber preform is changed by change of said arrangement of the members (Fig. 6- changing the arrangement of elements '52' and '56' would inherently change the refractive index distribution of the optical fiber shown in Fig. 6);

wherein each member is formed in a shape of a rod (Fig. 4);

wherein each of the hole and the member is formed in the shape of a cylinder (Fig. 4);

wherein the index of refraction of the members increases from the center of the preform to the outer circumference of the preform (i.e. '52' has lower index of refraction and '56' has higher index of refraction- column 5 lines 27-30; column 5 lines 34-36);

wherein the index of refraction of the members decreases and then increases from the center of the preform to the outer circumference of the preform (see Fig. 6- center core is considered a "member");

wherein the substrate is made of a material containing pure silica (column 5 line 67);

wherein the substrate is made of a material containing silica and a dopant having a predetermined index of refraction (column 6 lines 1-2);

wherein each of the members is formed in the shape of a cylinder having a diameter smaller than that of the cylindrical substrate (Fig. 4).

It is noted that the present application contains recitations drawn to method steps of making the claimed photonic crystal fiber preform (such as "inserting" the member, etc.). However, according to MPEP 2113, "[t]he patentability of a product does not depend on its method of production. If the product in the ... claim is the same as or obvious from a product of

Art Unit: 2874

the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985); MPEP 2113. Since Fajardo discloses all the structural elements of the claimed product as discussed above, the claims are rejected under 35 USC 102.

Also, it is noted that the present application contains recitations drawn to a function of the claimed product (such as the distribution of index of refraction being “controlled” by arrangement of the members). However, according to MPEP 2114, “[w]hile features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997); MPEP 2114. Since the device of Fajardo is capable of performing the claimed function as discussed above, the claims are rejected under 35 USC 102.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

Art Unit: 2874

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fajardo et al (US 6,445,862 B1) in view of Nakahara (US 2004/0136671 A1).

Fajardo discloses an optical device with limitations set forth in the claims, as discussed above, except it does not explicitly teach the refractive index of the members decreasing from the center to the outer circumference.

On the other hand, providing photonic band gap members such that the refractive index of the resulting preform decrease from the center to the outer circumference of the preform is well known in the art, for example as shown by Nakahara (Figs. 2B-2C). Such arrangement is considered advantageous and desirable because it provides effective means for lessening chromatic dispersion (paragraph 0042). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Fajardo to have its members arranged such that the refractive index of the members decrease from the center to the outer circumference of the preform.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

Art Unit: 2874

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571)272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sung H. Pak
Primary Patent Examiner
Art Unit 2874